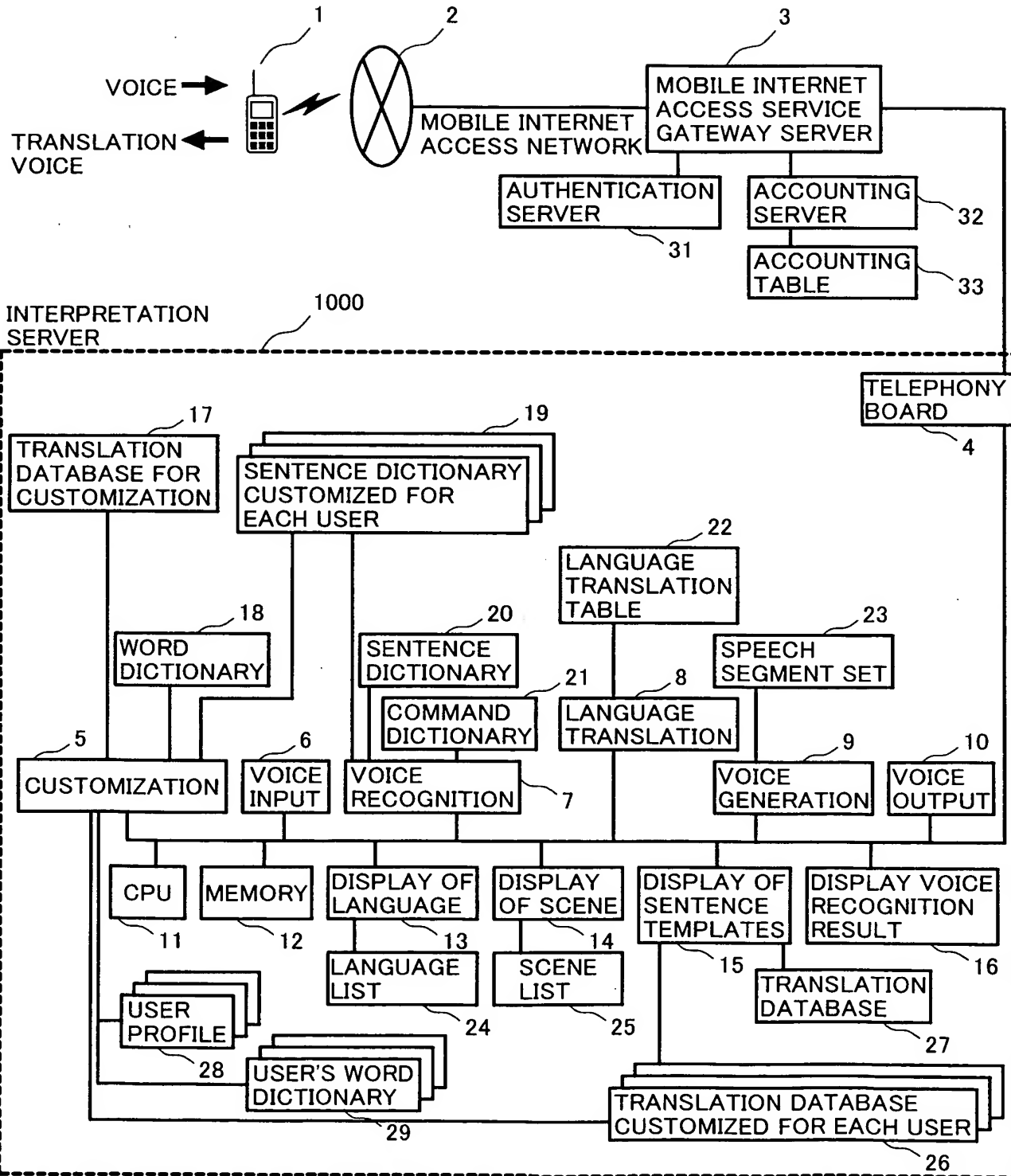


FIG.1



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FIG.2

| | | |
|-----|--------------|--|
| 201 | WAVE | |
| 202 | CSTRING | |
| 203 | JAPANESE | |
| 204 | ICNT | |
| 205 | RECOGS(1) | |
| | RECOGPNUM(1) | |
| | RECOGSNUM(1) | |
| | : | |
| | RECOGS(N) | |
| | RECOGPNUM(N) | |
| | RECOGSNUM(N) | |
| 206 | RESULT | |
| 207 | SYNWAVE | |
| 208 | JCNT | |
| 209 | LANG | |
| 210 | SCENE | |
| 211 | BSSENTENCE | |
| 212 | CSSENTENCE | |
| 213 | PCAND | |
| 214 | SCAND | |
| 215 | INDEX | |
| | : | |

FIG.3

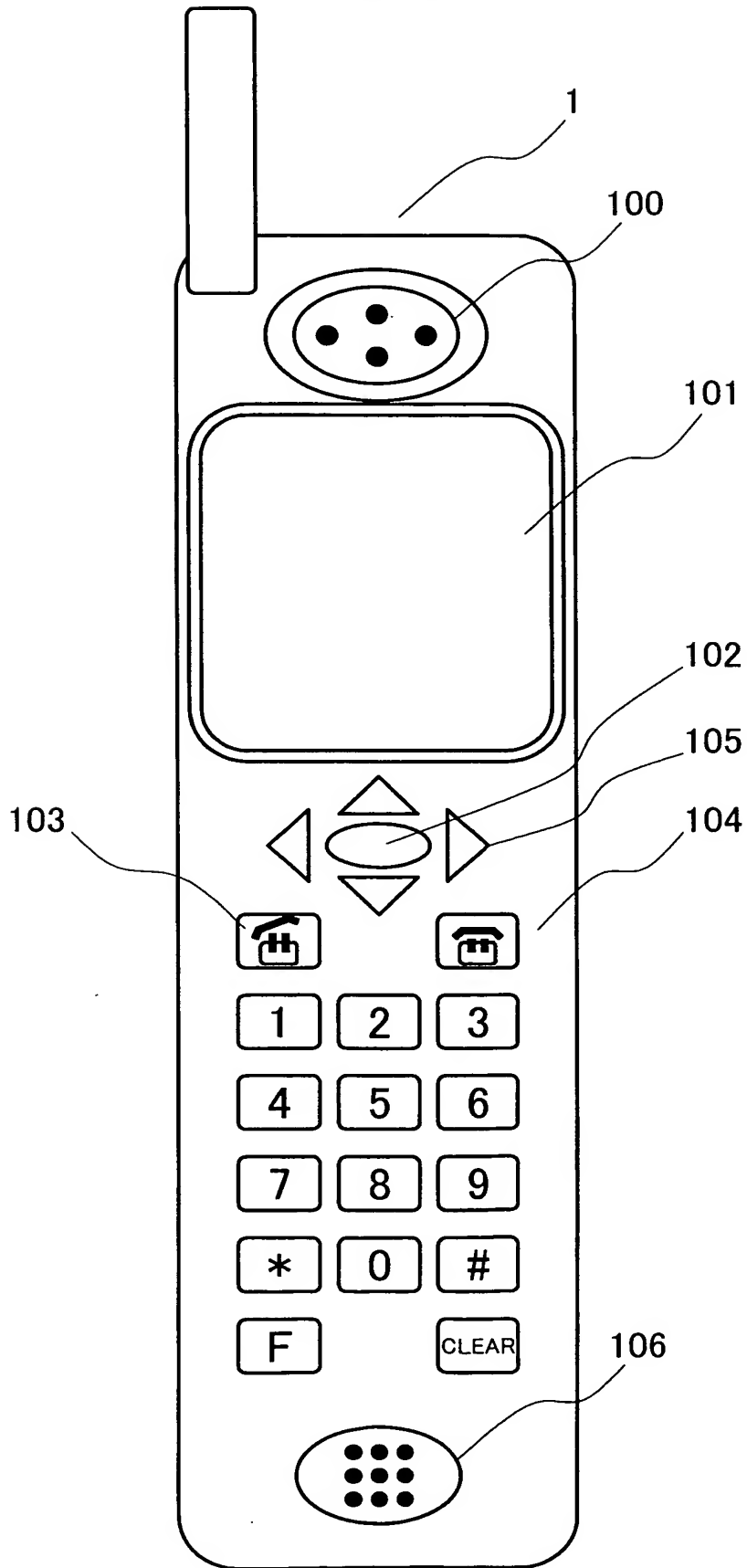


FIG.4

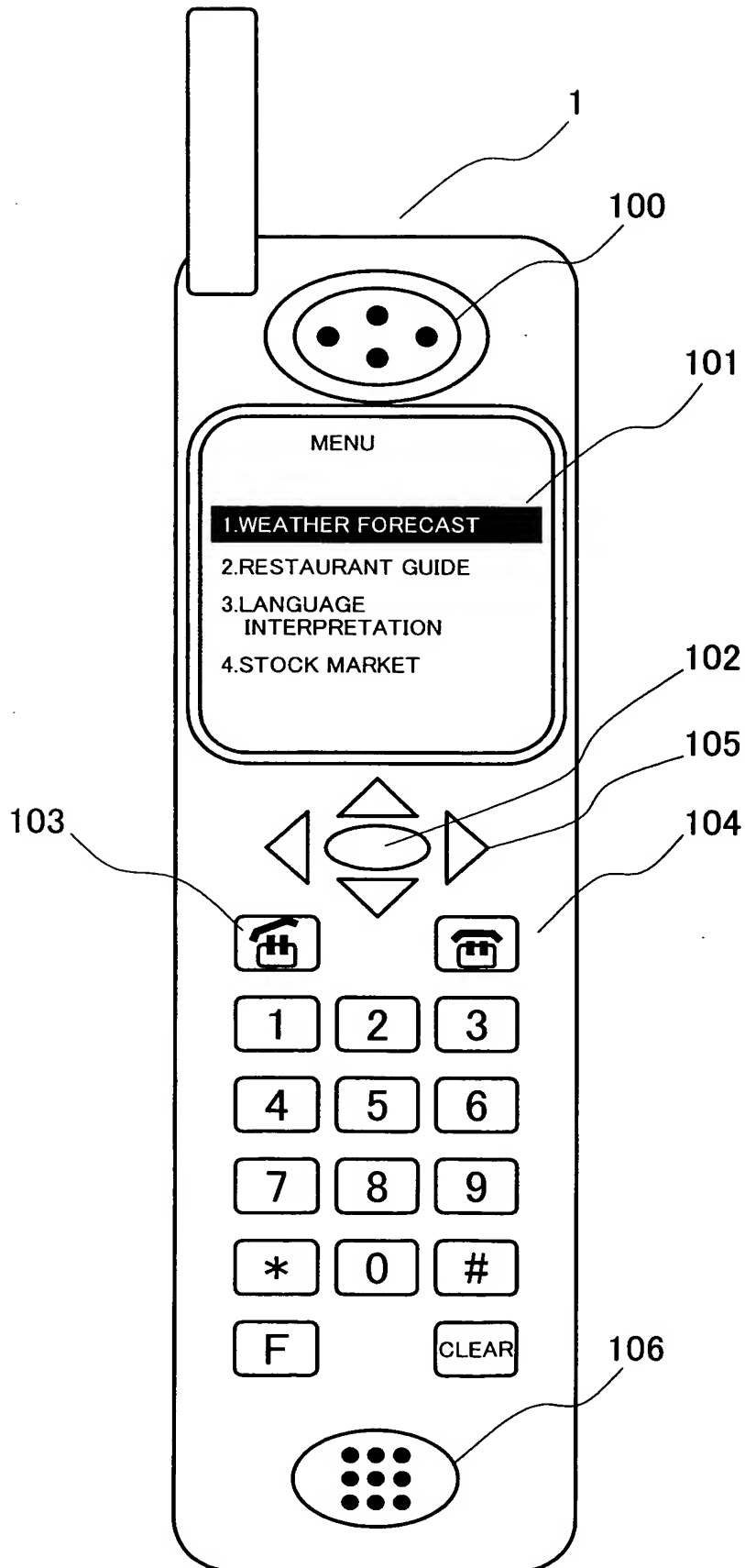


FIG.5

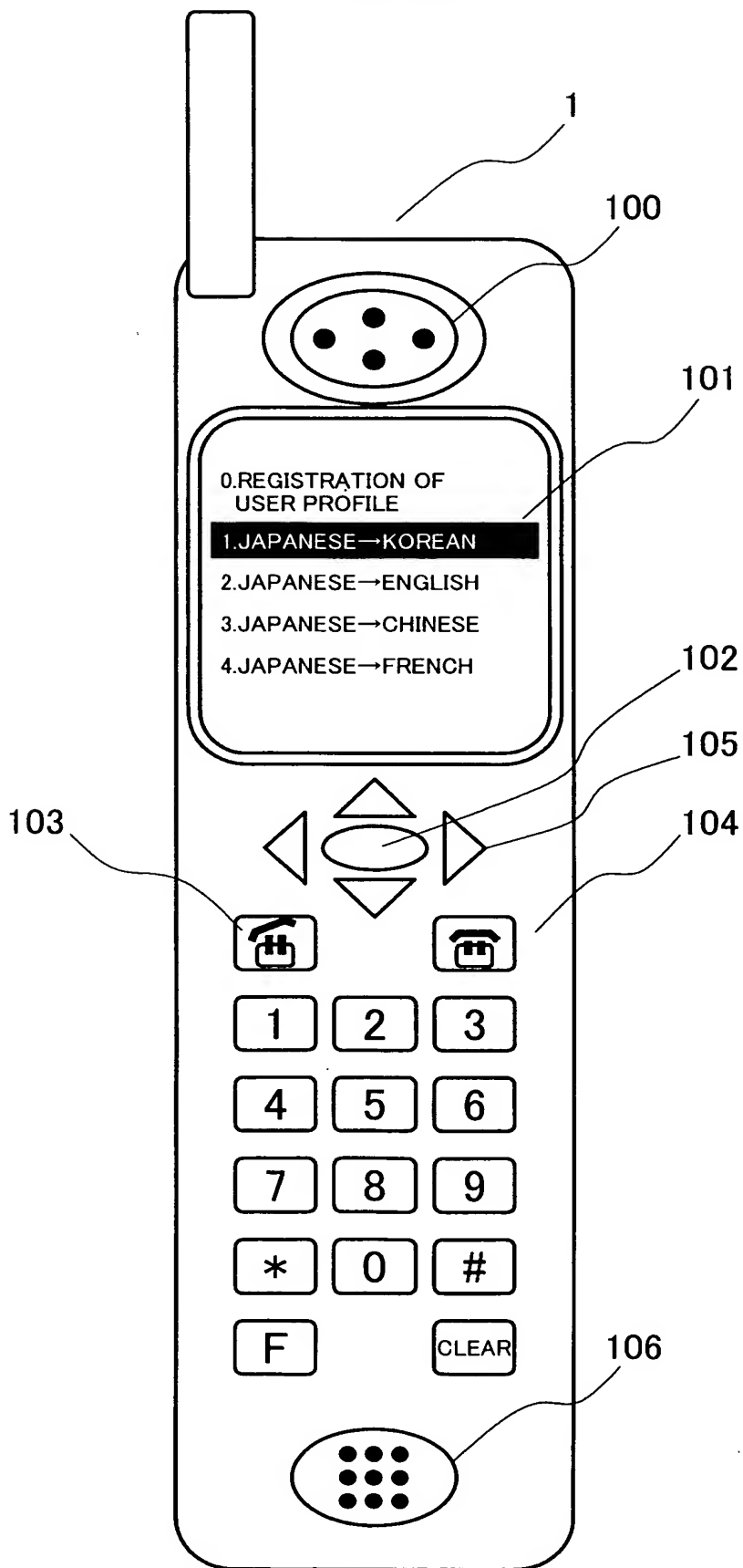


FIG.6

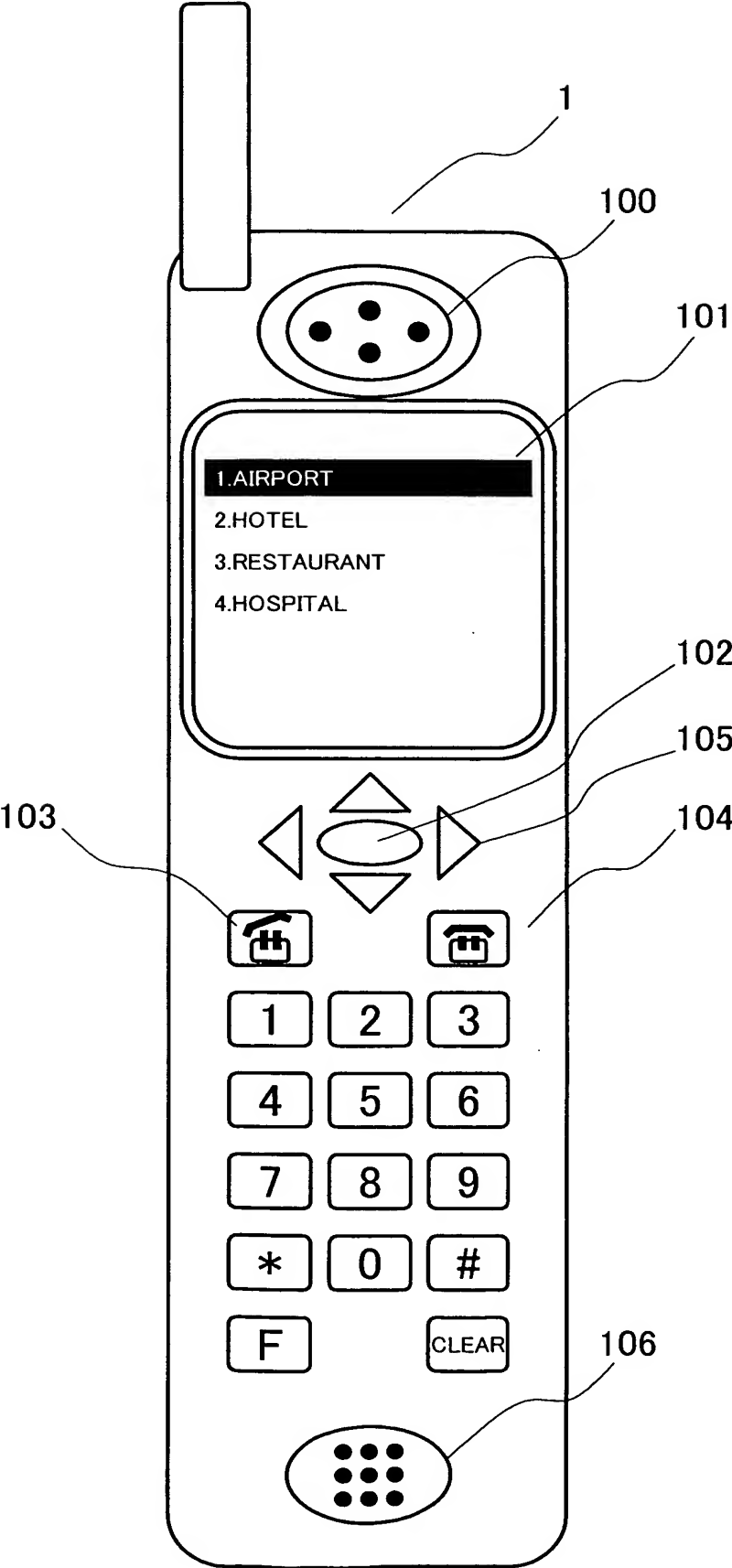


FIG.7

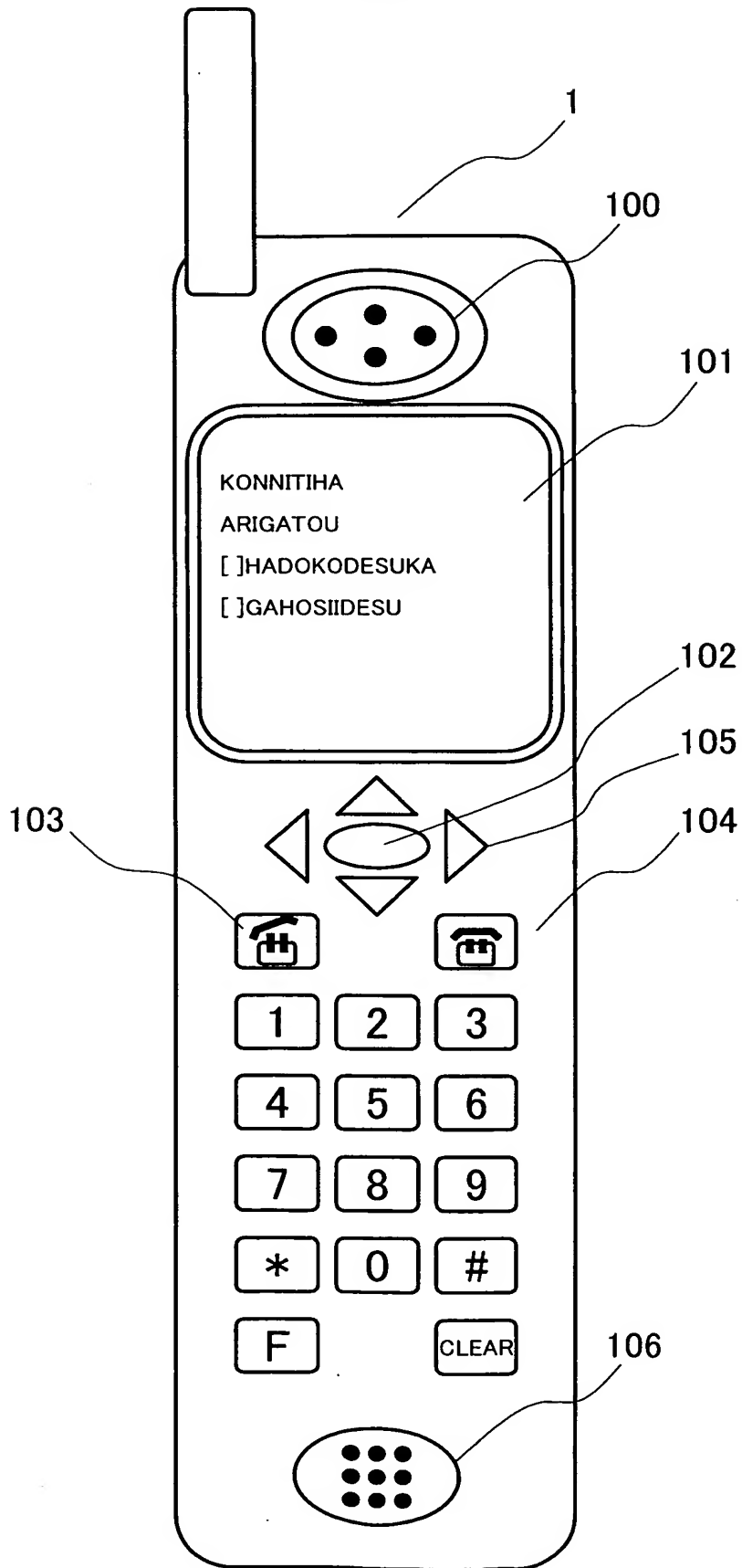


FIG.8

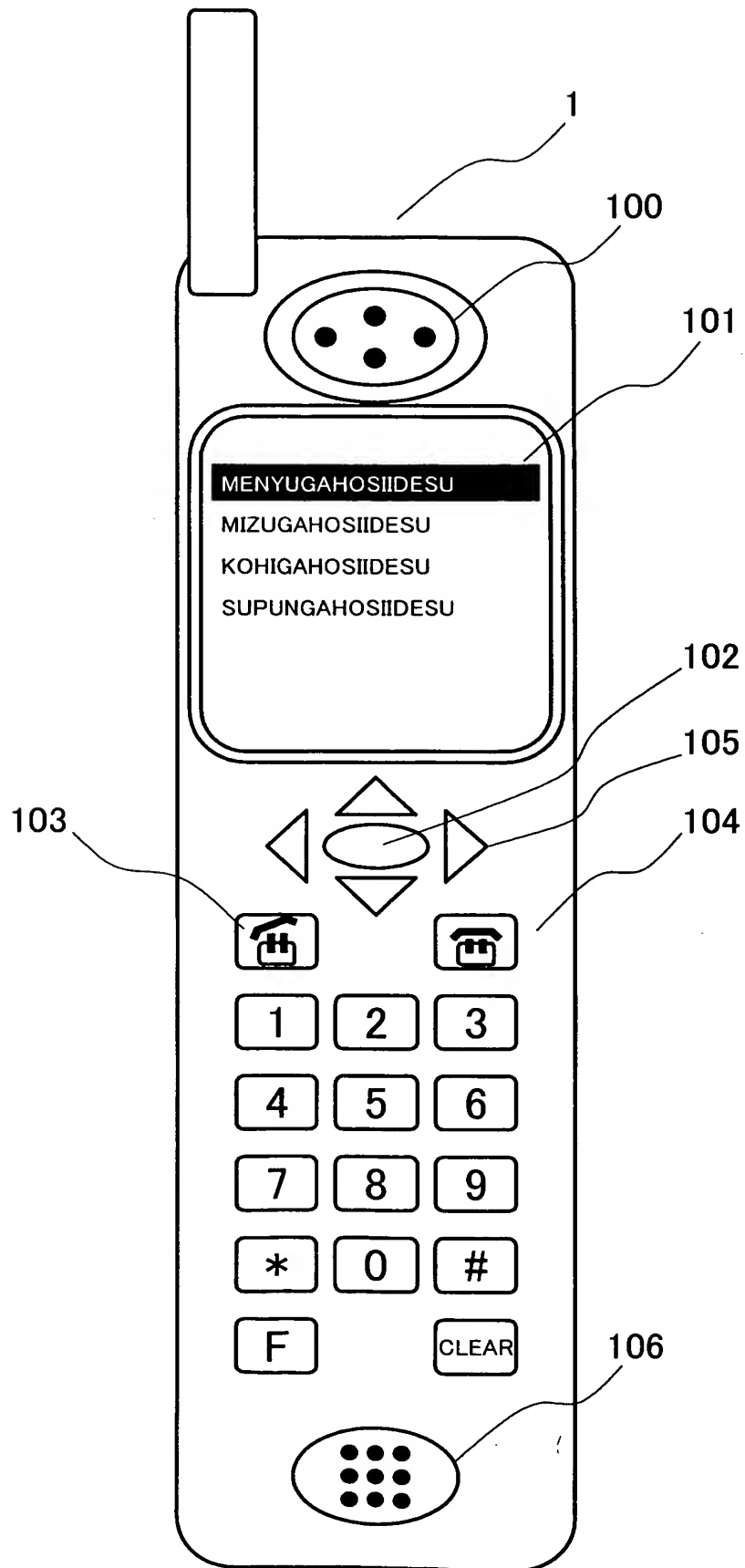


FIG.9

| SENTENCE TEMPLATE NUMBER | SENTENCE NUMBER | TRANSLATION | |
|-----------------------------|--------------------|-------------|------------------------------------|
| | | 1 | 2 |
| : | : | : | : |
| 3004 | 3004001 | ... | I'D LIKE TO HAVE A GLASS OF WATER. |
| 3004 | 3004002 | ... | CAN I SEE THE MENU? |
| 3004 | 3004003 | ... | I'D LIKE TO HAVE A CUP OF COFFEE. |
| 3004 | 3004004 | ... | I'D LIKE TO HAVE A SPOON. |
| : | : | : | : |

FIG.10

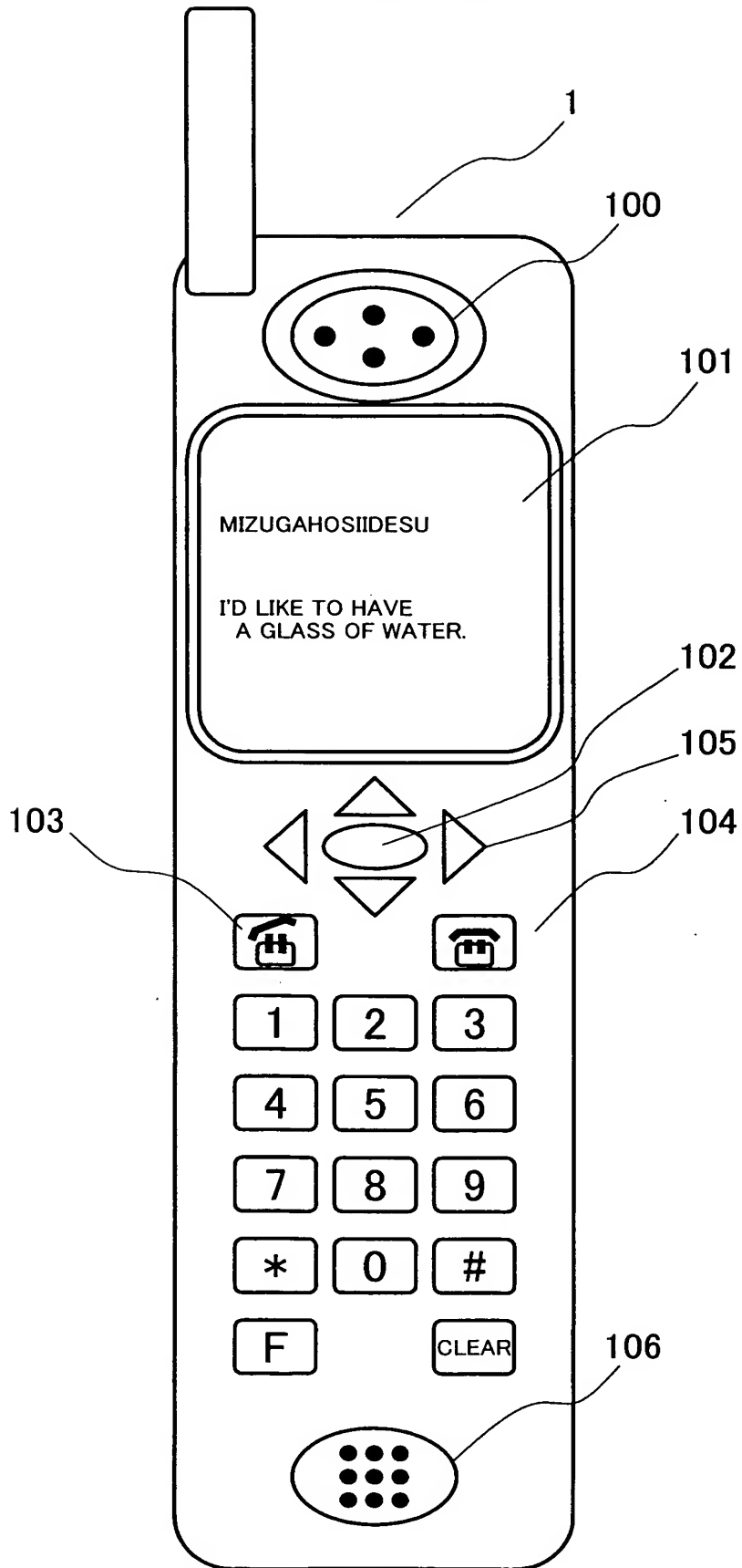


FIG.11

| | 3311 | 3312 |
|------|---------|--------|
| | USER ID | CHARGE |
| | : | : |
| 3301 | 1234 | 100 |
| 3302 | 1235 | 0 |
| 3303 | 1236 | 300 |
| 3304 | 1237 | 850 |
| | : | : |

FIG.12

| | 2411 | 2412 |
|------|-----------------|------------------|
| | LANGUAGE NUMBER | LANGUAGE |
| 2401 | 1 | JAPANESE→KOREAN |
| 2402 | 2 | JAPANESE→ENGLISH |
| 2403 | 3 | JAPANESE→CHINESE |
| 2404 | 4 | JAPANESE→FRENCH |
| | : | |

FIG.13

| | 2511 | 2512 |
|------|-----------------|------------|
| | SCENE NUMBER | SCENE |
| 2501 | 1 | AIRPORT |
| 2502 | 2 | HOTEL |
| 2503 | 3 | RESTAURANT |
| 2504 | 4 | HOSPITAL |

FIG.14

| | 2711 | 2712 | 2713 |
|------|-----------------|-----------------------------|----------------------|
| | SCENE NUMBER | SENTENCE TEMPLATE NUMBER | SENTENCE TEMPLATE |
| | 1 | 1001 | []HADOKODESUKA? |
| | : | : | |
| 2701 | 3 | 3001 | KONNITIHA |
| 2702 | 3 | 3002 | ARIGATOU |
| 2703 | 3 | 3003 | []HADOKODESUKA? |
| 2704 | 3 | 3004 | []GAHOSIIDESU |
| 2705 | 3 | 3005 | []HAARIMASUKA? |
| | : | : | |
| | | | |

FIG.15

| | 2011 | 2012 | 2013 | 2014 |
|------|--------------------------------|--------------------|------------------|--------------------------------|
| | SENTENCE TEMPLATE NUMBER | SENTENCE NUMBER | SENTENCE | TIME SERIES FEATURE VECTORS |
| 2001 | 1001 | 1001001 | KONNITIHA | A11,A12,... |
| 2002 | 1002 | 1001001 | ARIGATOU | A21,A22,... |
| | : | : | : | : |
| 2003 | 3004 | 3004001 | MIZUGAHOSIIDESU | A31,A32,... |
| 2004 | 3004 | 3004002 | MENYUGAHOSIIDESU | A41,A42,... |
| 2005 | 3004 | 3004003 | KOHIGAHOSIIDESU | A51,A52,... |
| 2006 | 3004 | 3004004 | SUPUNGAHOSIIDESU | A61,A62,... |
| | : | : | : | : |

FIG.16

| | 2111 | 2112 | 2113 |
|------|-------------------|---------|--------------------------------|
| | COMMAND NUMBER | COMMAND | TIME SERIES FEATURE VECTORS |
| 2101 | 1 | OK | B11,B12,... |
| 2102 | 2 | NEXT | B21,B22,... |
| 2103 | 3 | QUIT | : |
| | : | | B31,B32,... |

FIG.17

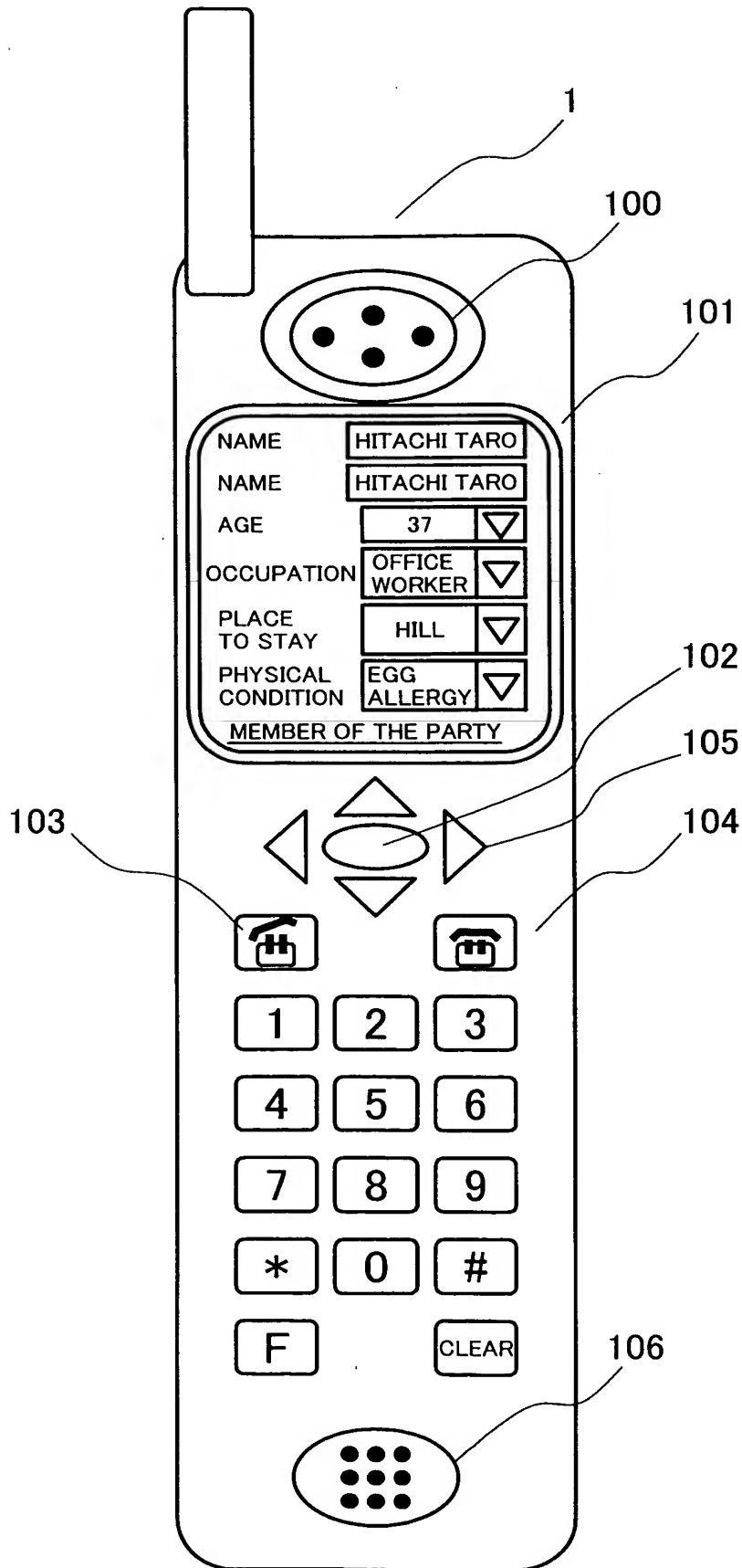


FIG.18

| | | | | | |
|------------------------|------------------|-------------|--------------|------|------|
| | 2811 | 2812 | 2813 | 2814 | 2815 |
| NAME | HITACHI | TARO | HITACHI | TARO | |
| AGE/SEX | 37 | MALE | | | |
| OCCUPATION | OFFICE WORKER | | | | |
| DESTINATION | MIAMI | | | | |
| PLACE TO STAY | FEBRUARY 12 | FEBRUARY 17 | HILL | HILL | |
| FLIGHT NUMBER | | | | | |
| PHYSICAL CONDITION | EGG ALLERGY | | | | |
| FOOD LIST | STONE CRAB | OYSTER | KEY LIME PIE | | |
| SHOPPING LIST | | | | | |
| : | | | | | |
| MEMBER OF THE PARTY | 2 | | | | |
| : | | | | | |
| NAME | HITACHI | KOTARO | | | |
| AGE/SEX | 11 MONTH | MALE | | | |

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FIG.19

| 1711 | 1712 | 1713 | 1714 | 1715 | 1716 | 1717 | 1718 |
|--------------|--------------------------|------------------------------|------------|---|--------------------------------|--|---|
| SCENE NUMBER | SENTENCE TEMPLATE NUMBER | SENTENCE TEMPLATE | SLOT | SELECTION CONDITION FOR SENTENCE TEMPLATE | TRANSLATION TEMPLATE | GRAMMATICAL INFORMATION FOR SLOTS | PRONUNCIATION INFORMATION FOR SENTENCE TEMPLATE |
| 1701 | 1001 | []HADOKO DESUKA? | <LOCATION> | | WHERE IS []? | | []HADOKO DESUKA? |
| 1702 | 1002 | KONOBASU HA[]NI IKIMASUKA? | <LOCATION> | | DOES THIS BUS GO TO []? | | KONOBASU HA[]HE IKIMASUKA? |
| | : | | | | | | |
| 1703 | 3004 | []GAHOSII DESU | <FOOD> | | I'D LIKE []. | PLURAL FORM OF COUNTABLE NOUN SINGULAR FORM OF UNCOUNTABLE NOUN | []GAHOSII DESU |
| 1704 | 3005 | []HA ARIMASUKA? | <FOOD> | | DO YOU HAVE []? | PLURAL FORM OF COUNTABLE NOUN SINGULAR FORM OF UNCOUNTABLE NOUN | []HA ARIMASUKA? |
| 1705 | 3006 | []ARERUGI DESU | <FOOD> | PHYSICAL CONDITION <ALLERGY> | I'M ALLERGIC TO []. | PLURAL FORM OF COUNTABLE NOUN SINGULAR FORM OF UNCOUNTABLE NOUN | []ARERUGI DESU |
| | : | | | | | | |
| 1706 | 4003 | []GA HIKITUKAWO OKOSIMASITA | | MEMBER OF THE PARTY <INFANT> | [] HAS GONE INTO CONVULSIONS. | | []GA HIKITUKAWO OKOSIMASITA |
| 1707 | 4004 | KOUKETUATU DESU | | PHYSICAL CONDITION <HIGH BLOOD PRESSURE> | I HAVE HIGH BLOOD PRESSURE. | | KOUKETUATU DESU |

FIG.20

| 1811 | 1812 | 1813 | 1814 | 1815 | 1816 | 1817 | 1818 |
|-----------------|-----------------|-----------------|----------------|-----------------------------------|---------------|----------------|--|
| KAKI | KAKI | KAKI | COMMON NOUN | <FOOD> <LIVING THING> | OYSTER | XCISTXER | COMMON NOUN; COUNTABLE; -S; BEGINING WITH VOWEL |
| : | : | : | : | : | : | : | : |
| HIRU HOTERU | HIRU HOTERU | HIRU HOTERU | PROPER NOUN | <HOTEL> | HILL HOTEL | HILU HOUTEL | PROPER NOUN; UNCOUNTABLE; DEFINITE ARTICLE; CONSONANT |
| : | : | : | : | : | : | : | : |
| SUTON KURABU | SUTON KURABU | SUTON KURABU | COMMON NOUN | <FOOD> <LIVING THING> | STONE CRAB | STOUN KRAEB | COMMON NOUN; COUNTABLE; -S; BEGINING WITH CONSONANT |
| : | : | : | : | : | : | : | : |
| <HOTEL> | | | CATEGORY | <PLACE> <BUILDING> <AGENCY> | | | |
| <FOOD> | | | CATEGORY | <CONCRETE OBJECT> | | | |

FIG.21

| 2911 | 2912 | 2913 | 2914 | 2915 | 2916 | 2917 | 2918 |
|-----------------|-----------------|-----------------|----------------|-----------------------------------|---------------|----------------|--|
| KAKI | KAKI | KAKI | COMMON NOUN | <FOOD> <LIVING THING> | OYSTER | XCISTXER | COMMON NOUN; COUNTABLE; -S; BEGINING WITH VOWEL |
| : | : | : | : | : | : | : | : |
| HIRU HOTERU | HIRU HOTERU | HIRU HOTERU | PROPER NOUN | <HOTEL> | HILL HOTEL | HILU HOUTEL | PROPER NOUN; UNCOUNTABLE; DEFINITE ARTICLE; CONSONANT |
| : | : | : | : | : | : | : | : |
| SUTON KURABU | SUTON KURABU | SUTON KURABU | COMMON NOUN | <FOOD> <LIVING THING> | STONE CRAB | STOUN KRAEB | COMMON NOUN; COUNTABLE; -S; BEGINING WITH CONSONANT |
| : | : | : | : | : | : | : | : |
| <HOTEL> | | | CATEGORY | <PLACE> <BUILDING> <AGENCY> | | | |
| <FOOD> | | | CATEGORY | <CONCRETE OBJECT> | | | |

FIG.22

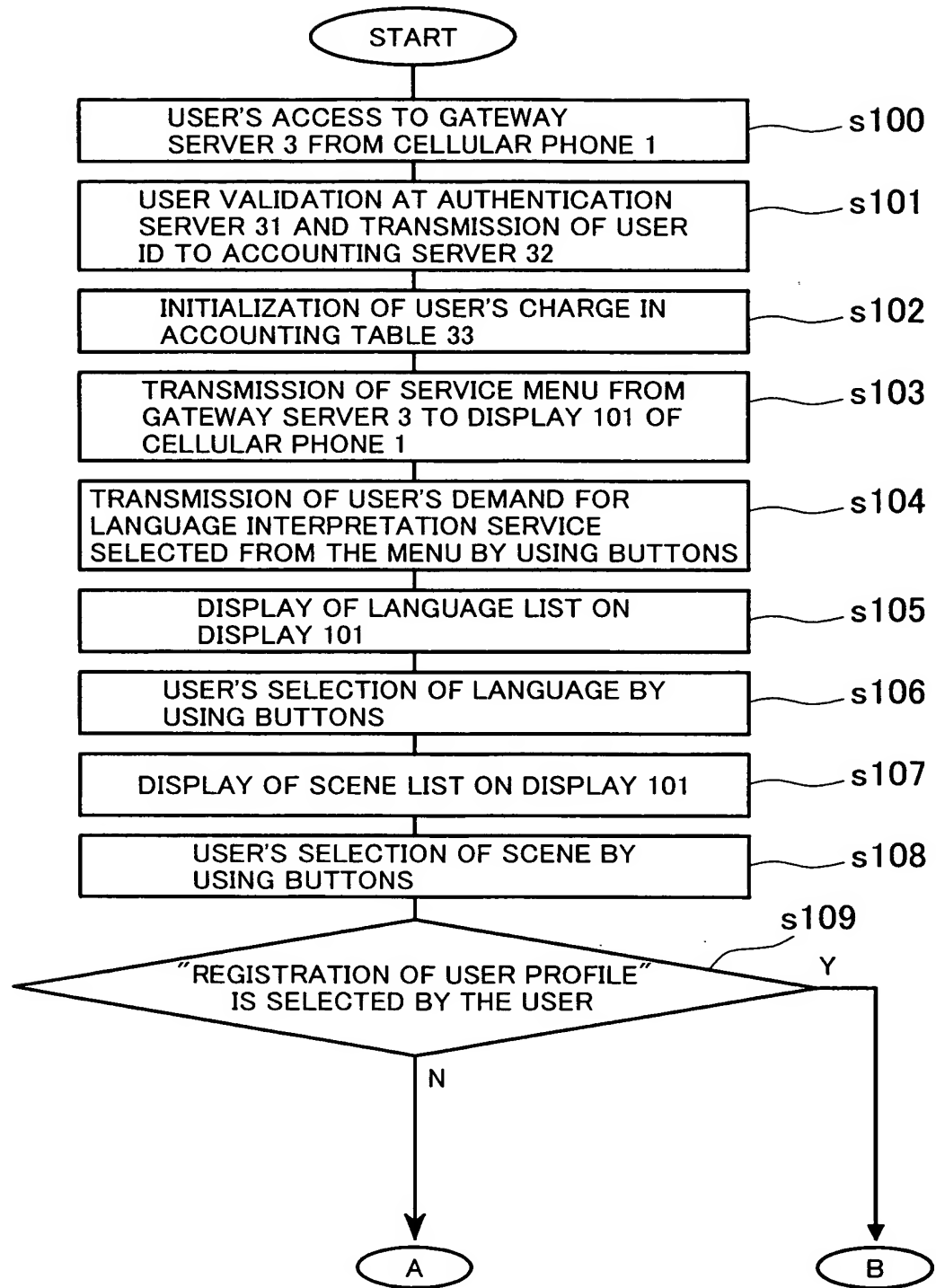
| | 2611 | 2612 | 2613 | 2614 |
|------|-----------------|--------------------------------|--------------------------------|--------------------|
| | SCENE NUMBER | SENTENCE TEMPLATE NUMBER | SENTENCE TEMPLATE | SLOT |
| 2601 | 1 | 1001 | []HADOKODESUKA? | HILL HOTEL |
| 2602 | 1 | 1002 | KONOBASUHA[]NI IKIMASUKA? | HILL HOTEL |
| | : | : | | |
| 2603 | 3 | 3004 | []GAHOSIIDESU | STONE CRAB; OYSTER |
| 2604 | 3 | 3005 | []HAARIMASUKA? | STONE CRAB; OYSTER |
| 2605 | 3 | 3006 | []ARERUGIDESU | EGG |
| | : | | | |
| 2606 | 4 | 4003 | []GAHIKITUKEWO OKOSIMASITA | SON |
| | : | | | |

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FIG.23

| | 1911 | 1912 | 1913 | 1914 |
|------|--------------------------------|--------------------|--------------------------------------|-----------------------------------|
| | SENTENCE TEMPLATE NUMBER | SENTENCE NUMBER | SENTENCE | TIME SERIES OF FEATURE VECTORS |
| 1901 | 1001 | 1001001 | HIRUHOTERUHA DOKODESUKA? | A11,A12,... |
| 1902 | 1002 | 1002001 | KONOBASUHAHIRU HOTERUNIIKIMASUKA? | A21,A22,... |
| | : | : | : | : |
| 1903 | 3005 | 3005001 | SUTONKURABUHA ARIMASUKA? | A31,A32,... |
| 1904 | 3005 | 3005002 | KAKIHAARIMASUKA? | A41,A42,... |
| | 3006 | 3006001 | TAMAGOARERUGIDESU | A51,A52,... |
| 1905 | : | : | : | : |
| 1906 | 4003 | 4003001 | MUSUKOGAHIKITUKEWO OKOSIMASITA | A61,A62,... |

FIG.24



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FIG.25

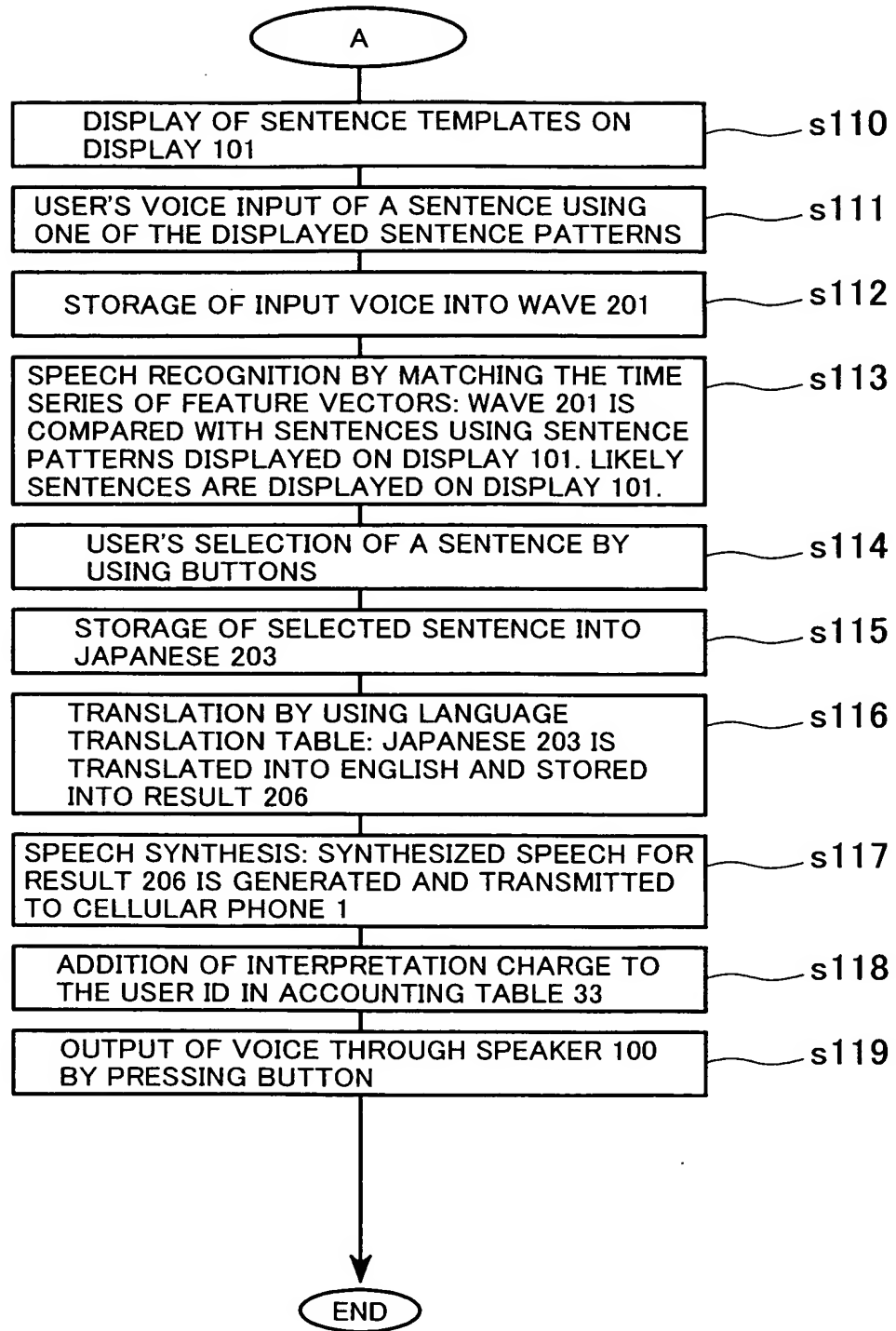
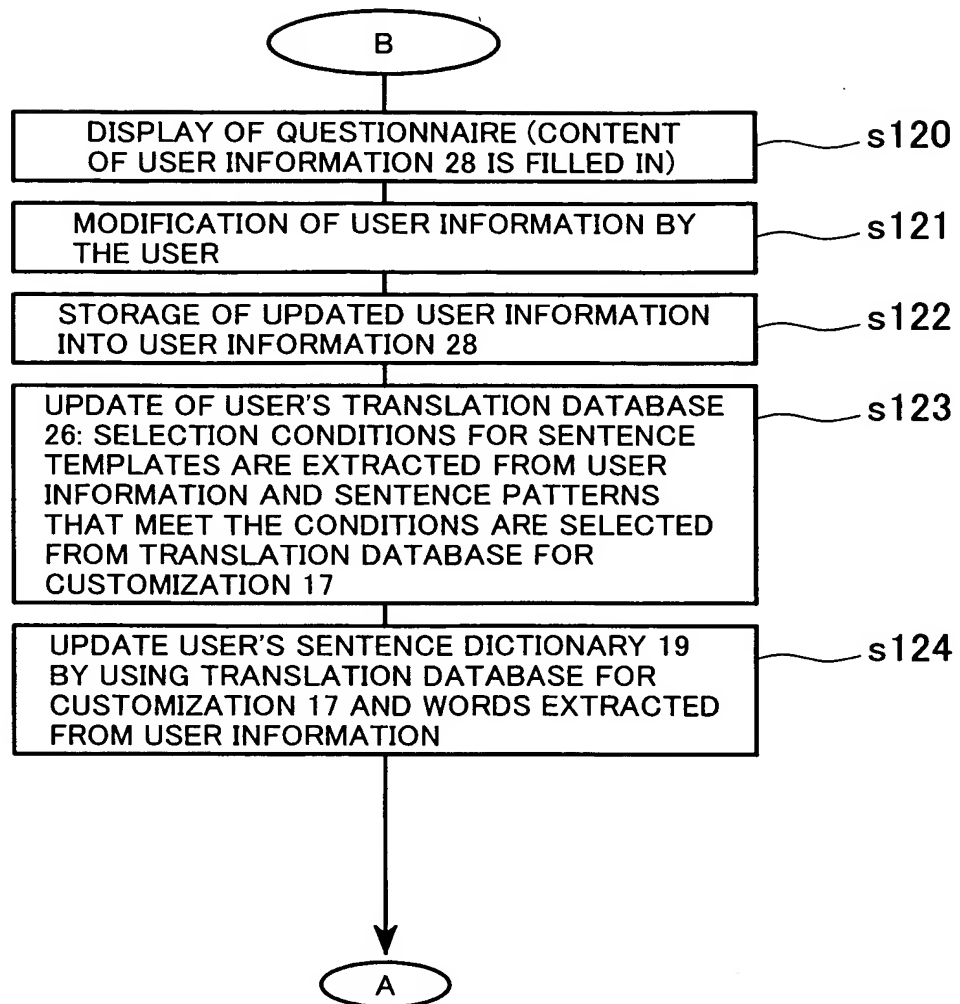


FIG.26



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FIG.27

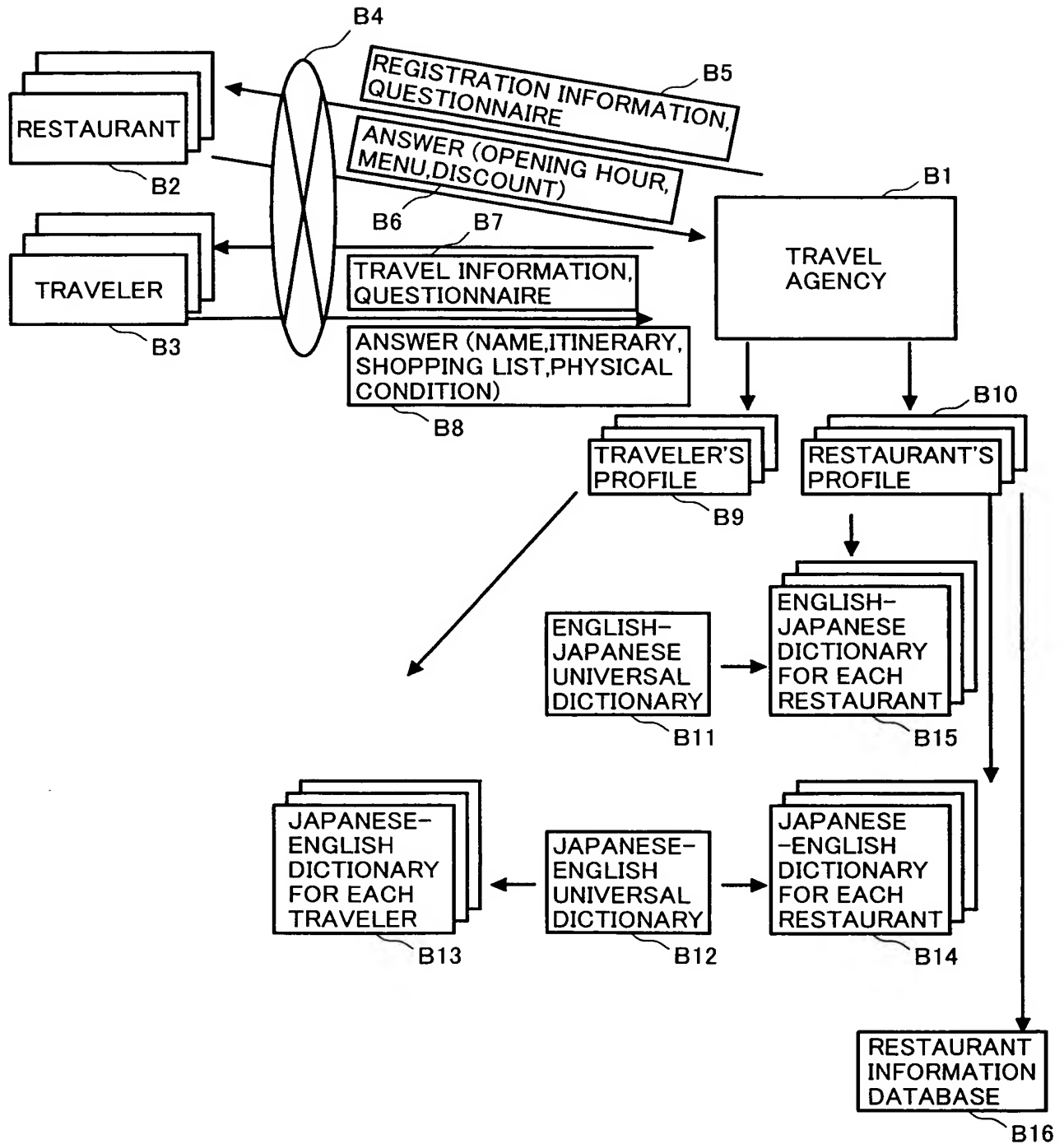
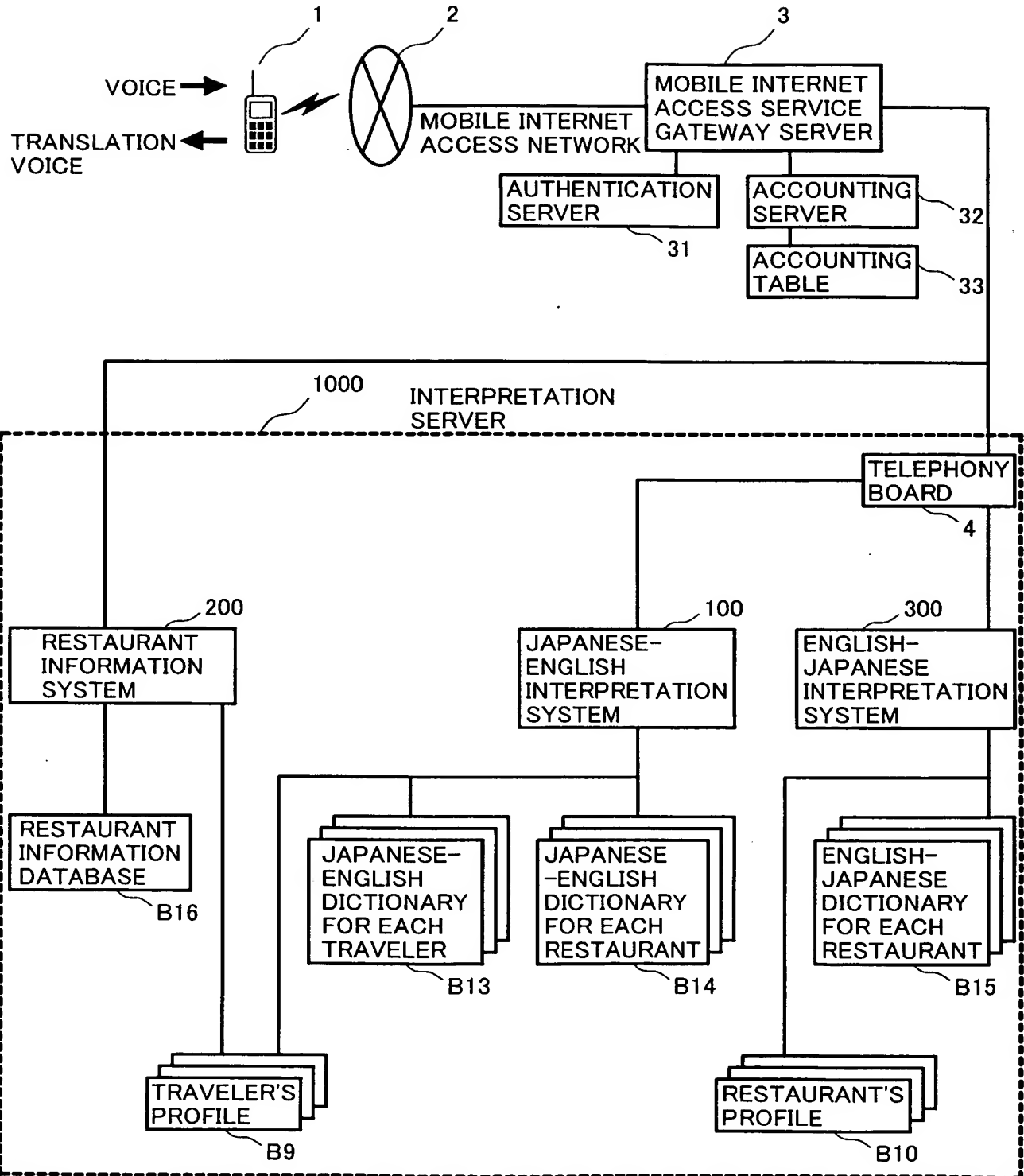


FIG.28



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FIG.29

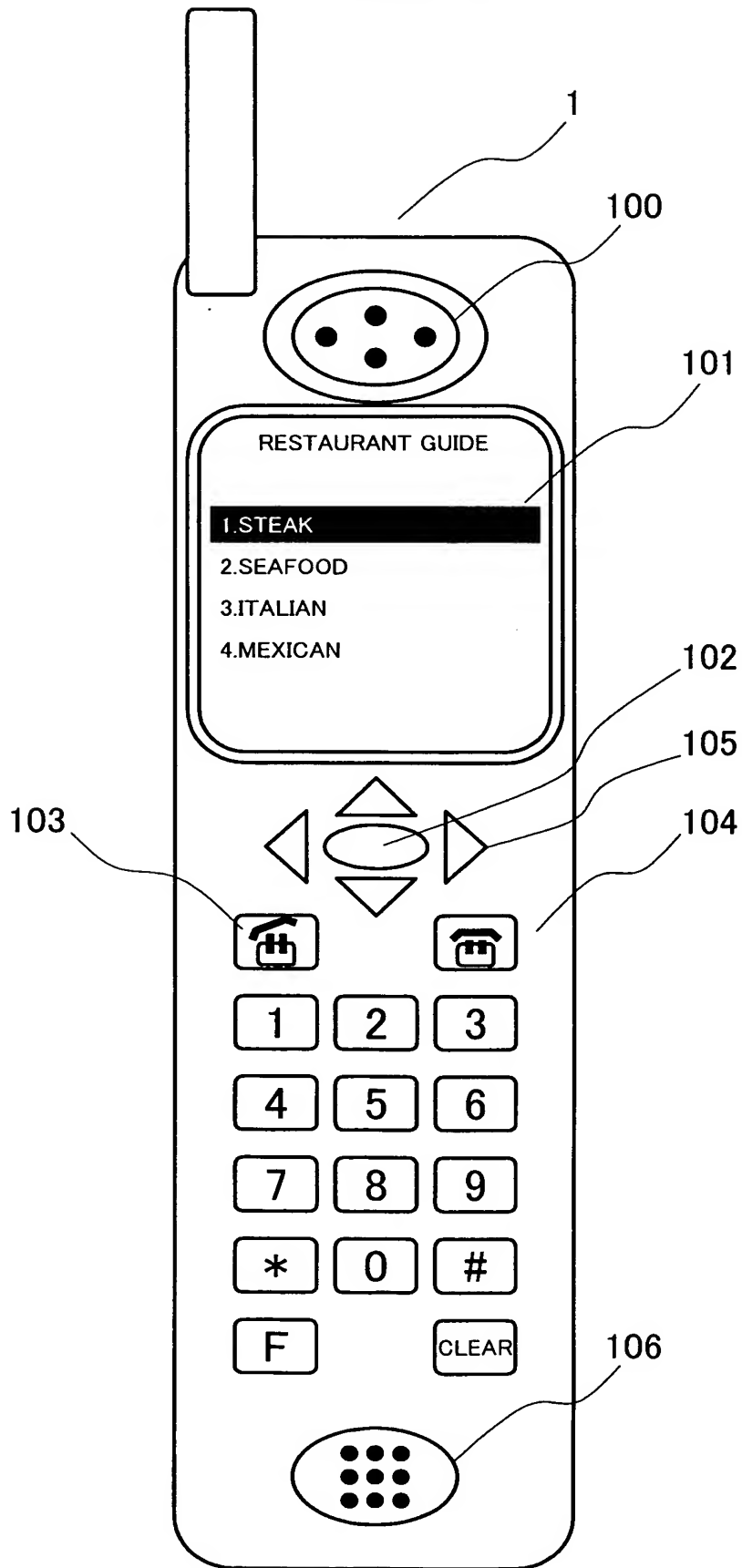
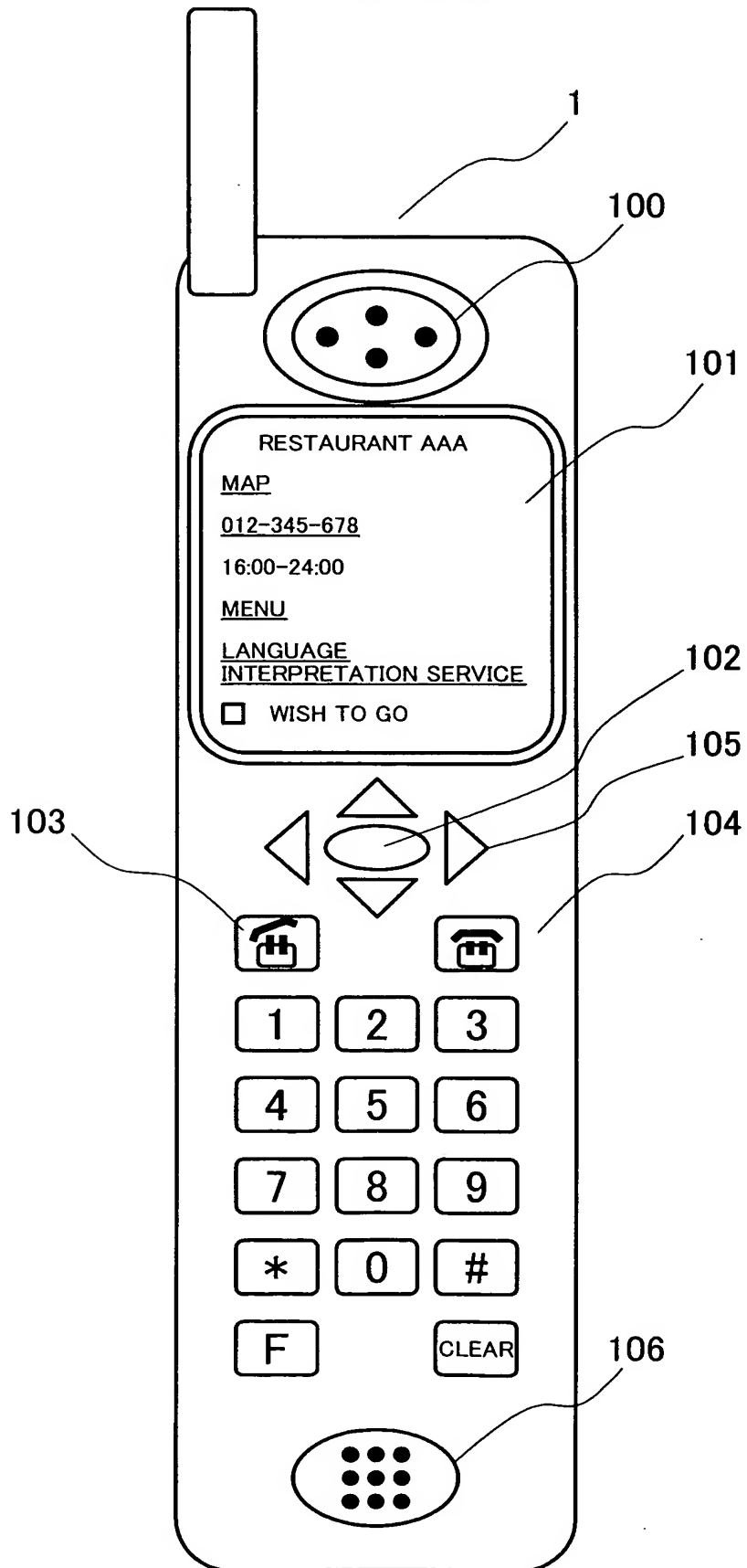


FIG.30



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FIG.31

